

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR2004/000159

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7 B01D 35/00, B01D 5/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC7 B01D, F25J, C02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Korean Patents and applications for inventions since 1975,  
Korean Utility models and applications for Utility models since 1975,  
Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
eKIPASS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages            | Relevant to claim No. |
|-----------|---|-----------------------|
| Y         | US 6,684,648 B2 (Abdul-Rahman Abdul-Kader M. Faqih) 3 February 2004<br>see the whole document | 1, 3, 9               |
| Y         | US 5,517,829 A (Charles L. Michael) 21 May 1996<br>see the whole document                     | 1, 3, 9               |
| A         | US 5,846,296 (Per Kare Krumsvik) 8 December 1998<br>see the whole document                    | 1                     |
| A         | KR 2004-0038345 A (Masterlife Incorporation) 8 May 2004<br>see the whole document             | 1                     |
| A         | US 4,351,651 A (Calice G. Courmeya) 28 September 1982<br>see the whole document               | 1                     |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search  
24 JUNE 2004 (24.06.2004)

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/KR2004/000159

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---------------------|----------------------------|---------------------|
| US 6,684,648 B2                           | 03.02.2004          | None                       |                     |
| US 5,517,829 A                            | 21.05.1996          | None                       |                     |
| US 5,846,296 A                            | 08.12.1998          | W09609443 A1               | 28.03.1996          |
| KR 2004-0038345 A                         | 08.05.2004          | None                       |                     |
| US 4,351,651 A                            | 28.09.1982          | None                       |                     |